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## ELISION IN ESAHIE

*Victoria Owusu Ansah*

### Abstract

One of the syllable structure changes that occur in rapid speech because of sounds influencing each other is elision. This paper provides an account of elision in Esahie, also known as Sehwi, a Kwa language spoken in the Western North region of Ghana. The paper discusses the processes involved in elision, and the context within which elision occurs in the language. The paper shows that sound segments, syllables and tones are affected by the elision process. It demonstrates that elision, though purely a phonological process, is influenced by morphological factors such as vowel juxtapositioning during compounding, and at word boundary. The evidence in this paper show that there is an interface between phonology and morphology when accounting for elision in Esahie. Data for this study were gathered from primary sources using ethnographic and stimuli methods.

**Keywords:** Elision, Esahie, Sehwi, Tone, Deletion, Phonology

### 1.0 Introduction

This paper provides an account of elision in Esahie, a Kwa language spoken in the Western North Region of Ghana<sup>1</sup>. It discusses the processes involved in elision in Esahie, and the context within which elision occurs in the language. The paper demonstrates that elision is employed in Esahie as a syllable structure repair mechanism. Elision is purely a phonological process but can sometimes be triggered by morphological factors. Indeed, the works of (Abakah 2004a, 2004b), Abdul-Rahman (2013), Abukari (2018), Becker and Gouskova (2016) writing on Akan, Dagbani and Russia respectively, confirm that elision

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<sup>1</sup> Speakers of Esahie in Ghana number about 580,000 and they live mostly in the Western North Region of the country (Ghana Statistical Service Report 2012, 2010 National Population Census). The region is located within the tropical rain forest belt and is endowed with natural resources and has very fertile lands. Linguistically, Esahie is proximate to Nzema, Ahanta, Brosa (Enchi), Chakosi and Sanvi (spoken in La Cote D'voire). Not much documentation has been done on the language. Previous studies in the language include (Andam 2017; Broohm 2017, 2019; Broohm & Rabanus 2018; Frimpong 2009; Ntumu & Bofo 2002; Owusu Ansah 2019)

is a common feature in most languages for resolving syllable structure anomalies, and it will be insightful to understand how the process operates in Esahie.

Data for this study forms part of a comprehensive data collected for a longitudinal study in Esahie. The data were gathered from primary sources. The primary naturalistic data were elicited from native speakers in Sehwi using ethnographic and stimuli methods. Tools used were the Ibadan Word list, SIL picture story, and participant observation. Twenty people were selected from the data collection. Five respondents were selected from four towns, male and female, because of the impact of gender on speech production. Unstructured interviews were also used as follow ups from the elicitation. The data were recorded using an audio recorder and later transcribed. The transcribed data were crosschecked with four different native speakers for consistency, accurateness and native speaker acceptability.

The analysis of the data is captured within the Autosegmental theory introduced by Goldsmith (1976) as a framework which gives independent representation to segments and suprasegments such as tone. In this theory, phonological features are represented in a graphical way that shows the relationship that exists between the features that make up the sound segments and the supra segments.

The tools used in the Autosegmental theory include the Association Lines which are formal devices that link autosegments on different tiers to each other at the skeletal tier; the skeletal or timing tier which acts as an anchoring device for elements on various tiers; the segmental tier which carries the segments; the feature spreading which are used to show the spreading or assimilation of feature to a sound; the feature delinking which is used to show the deletion of feature from a sound; and the feature tier which carries the various sound features such as Tone, ATR, Nasal, Height, Phonation, etc.

### 1.1 Basic Tenets of Autosegmental Phonology

The successful operation of Autosegmental theory hinges on a set of principles, including the Universal Association Convention, the Linkage Condition, the Obligatory Contour Principle and the Well Formedness Condition.

### 1.2 Universal Association Convention

The Universal Association Convention (UAC) states that “when unassociated vowels and tones appear on the same side of an association line, they will be automatically associated in one-to-one fashion radiating outward from the association line” (Goldsmith 1990: 14). The UAC thus helps one to realize the relationship of the elements on each tier to the other. Such relationships are seen after applying the UAC. In other words, the UAC maps tones to the TBU one-to-one, left to right.

### 1.3 Linkage Condition

Goldsmith (1990: 53) observes that “a segment that is not linked to a position on the skeletal tier will not be phonetically realized”. All segments must, therefore, be associated. This condition explains why floating tones are not phonologically realized unless linked to a skeletal position.

### 1.4 Obligatory Contour Principle

First proposed by Leben (1973), the Obligatory Contour Principle (OCP) restricts tone association. This principle prevents two identical features from being adjacent to each other. The principle came about due to “the need to streamline some of the descriptive devices of the theory” (Abakah 2004b: 46). In Autosegmental theory, there was indeterminacy in the structural representation of segment and suprasegments. Thus, with the OCP, when sounds appear in succession to each other, they must differ in at least one tone feature. Where adjacent, the tones must be of different values.

### 1.5 Well Formedness Condition

The Well Formedness Condition (WFC) governs the linking and association of elements on different tiers and requires that each vowel must be associated with at least one tone; each tone must be associated with at least one vowel; no association lines may cross. Thus, the WFC provides sanity in the association of autosegments as associations are not done haphazardly.

### 1.6 Principles of Autosegmental Theory

The application of the Autosegmental theory is governed by some principles which regulate the theory. They aid in the successful application of WFC by solving any problem that might crop up from its application. The principles are mapping, which means to associate vowels with tones in a one-to-one fashion left to right until one runs out of tones or vowels; dumping, which requires that in mapping, if some tones are still free, that is unassociated, they must be link to the last vowel to the right; and spreading, which also requires that if in applying the mapping principle, some vowels are still free, they also must be link to the last tone on the right.

Tone is an autonomous feature which can survive without the segment, and vice versa. That means that tone is autonomous and should be given independent representation. Aspects of the sounds discussed in the paper occur in prosody, and if we take tone, it can best be explained using the Autosegmental theory. It is in line with this that the Autosegmental theory is adopted to account for the tone and other processes in this paper.

The paper is segmented as follows; Section 1 introduces the study while section 2 provides a brief account on the syllable structure of Esahie and elision in general. Section 3 discusses the environments within which vowel elision occurs in Esahie. Section 4 focuses on consonant elision, with section 5 dwelling on elision in borrowed words in Esahie. The rest are section 6 which focuses on tonal processes in elision, and section 7 which concludes the discussion.

## 2.0 Syllable structure in Esahie

In this section I present a brief account on the syllable structure of Esahie. The syllable structures in Esahie are the CV, V and CVC (Owusu Ansah 2019). The V can be either a vowel or a syllabic consonant, i.e., a nasal, or a trill.

### (1) Syllable types in Esahie

CV—	/gó/	‘to dance’
	/bó/	‘to whip’
	/dó/	‘there’
V—	/ɔ/, /a/, /o/, /n/, /m/, /r/	
CVC-	/fém/	‘to lend’
	/pò.fón/	‘breast’

The syllable types above show that the language has a dis-preference for consonant cluster, i.e., CCV<sup>2</sup> syllables and allows only the alveolar nasal /n/, and bilabial nasal /m/ in coda positions. In the subsequent sections, I discuss the salient elision processes that occur in the language.

### 2.1 Elision

Elision has been addressed in diverse ways. Matthews (1997: 11) alludes that “elision is a process by which a vowel at the end of a word is lost, or elided, before another vowel at the beginning of a word.” Data from Akan and other languages depict that elision extends beyond word final to mid and initial positions. Abakah (2004a: 182) adds to the context when he describes elision as a “phonological process by which a vowel, a consonant and sometimes a syllable, which is an intrinsic property of a morpheme in an isolative style, is dropped in a combinative style”.

Accordingly, in elision, a sound segment, be it a vowel, consonant or a syllable, is lost in different phonological contexts. Most languages employ elision to resolve vowel

<sup>2</sup> The CCV word structure always has /r/ in the second C slot.

hiatus (Orie & Pulleyblank 2002), however, there are differences as to which vowel is elided and the context of elision. In some languages, the first vowel ( $V_1$ ) is elided, while in others, the second vowel ( $V_2$ ) is elided. Casali (1997) identifies four contexts in which vowel elision is used to resolve vowel hiatus in Etsako. These are: at the boundary between two lexical words (*de + akpa* → *dakpa* 'buy a cup' & *owa + ɔda* → *owɔda* 'a different house'); at the boundary between a lexical word and a functional word, where  $V_1$  elision is more common than  $V_2$ . It can also be at the boundary between a CV prefix and a root, where he claims that  $V_1$  occurs; and at the boundary between a root and a suffix, where either  $V_1$  or  $V_2$  can be elided.

Similar to Etsako, Abakah (2004a) shows that in Akan, vowel elision involves the loss of one of two contiguous vowel at word boundary. This occurs when a word that ends in a vowel is followed by another word that begins in a vowel. He explains that if the second vowel in the sequence of  $V_1 \# V_2$  is [-Low], then it is obligatorily deleted. However, if the first vowel is [-low], then the first vowel is deleted. Abakah (2004a) further shows that in compounding, word boundary vowel sequence may be deleted simultaneously under the condition that the final syllable of the first free form is CV#, where the C is [+Son] and the  $V_1$  is [+High], with the  $\# V_2$  underspecified for tongue height position feature. He explains that regardless of the dialectal variations in Fante, a post sonorant word final vowel deletion must occur intervocalically at the underlying level of representation. Aside from sound segments, Abakah notes that syllables are also deleted in rapid speech in Fante.

At the word final level, Adomako (2015) observes that nasals in Akan, particularly [m], are sometimes deleted in some reduplicants final position. He explains that verb bases of CVN or CVVN structures are of two different morphemic structures in the underlying representation; monomorphemic verb base and bimorphemic verb base. However, while the CVN preserve their 'final' nasals in the reduplicants, the CVVN structure lose them in their reduplicants in the language's effort to satisfy a high-ranking template constraint.

Abdul-Rahman (2013) also shows that in Dagbani, elision affects vowels, nasal consonants or an entire syllable. Also, like other languages, elision in Dagbani occurs at word boundaries but always leftward elision and never to the right, and that the intervening segments to the right are consonants and not vowels. Still in Dagbani, Abukari (2018) shows that in compounding, the commonly deleted segments in compound formation were found to be vowels and CVs.

Elision, especially final nasal elision, is also observed in children's speech. Moran (1993) observes that African American children delete final consonants but mark their presence in a manner that might be unnoticed in a typical speech evaluation. He explains that the children use vowel length for minimal pairs for final consonants that were deleted. Also, in French, Morin (1986) notes that the inflectional affixes /s/ and /t/- to which the final [t] of 3<sup>rd</sup> pers. marker-(e) is added is lost before pause. Also, the loss of plural /s/ (or more generally of inflectional s after nouns and adjectives) is also quite common though it is difficult to determine whether this loss is phonetic or paradigmatic.

These examples and others not mentioned, confirm that elision is common in most languages. However, little is known about the subject in Esahie. It is in light of this that I discuss the subject of elision in the language. I show in the study that in Esahie, elision affects vowels across words boundaries, in compounding, at the syllable level, in borrowed words, and at the tonal level.

### 3.0 Elision in Esahie

As a phonological process, both vowels and consonants can be elided in Esahie. This process occurs often to create syllable types that are acceptable in the language. In this study, I group the discussion of elision into two- vowel elision and consonant elision and show how they manifest in the language. I show that through phonological processes such as elision, consonant clusters are simplified at onset and coda positions.

#### 3.1. Vowel Elision across word boundary

Vowels can be concatenated when two independent monomorphemic words are put together. When this occurs, one of the vowels may be elided. In Esahie, when two words are juxtaposed at word boundary, and the first word ends in a vowel [V<sub>1</sub>], and the second word begins with a vowel [V<sub>2</sub>], one of the words loses its vowel. The choice of the vowel to be deleted is morphologically conditioned. In some morphological constructions, the V<sub>1</sub> is deleted, while in others, the V<sub>2</sub> is deleted. Let us examine instances of occurrence in Esahie.

##### 3.1.1 V<sub>1</sub> Elision in a Perfective construction

Perfective verbs in Esahie are formed by adding a low tone clitic /à/ to a high-toned verb. In a perfective construction where a pronominal<sup>3</sup> is added to the perfective verb, the pronominal loses its vowel in the sequence. Consider these examples.

- (2) a.      **mí**                      **à**                      **kó**      →      **màhó**  
                  1SG-SUBJ                      PERF                      go  
                  ‘I have gone.’

<sup>3</sup> Not all pronominals allow their vowels to be deleted in a possessive construction. The 2PL, *emɔ* does not lose its vowel under the same context discussed. This is due to the opaqueness of /ɔ/ which blocks the deletion process.

- (1)      **èmó** + **èsiré**      →      **èmó èsiré**      ‘your anthill’  
                  you + anthill

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b.	<b>bé</b> 3PL-SUBJ 'they have put on a cloth'	<b>à</b> PERF	<b>kírá</b> put on a cloth	→ <b>bàhírá</b>
c.	<b>wó</b> 2SG-SUBJ 'he has destroyed it'	<b>à</b> PERF	<b>sètéí</b> destroy	→ <b>wàsètéí</b>
d.	<b>wó</b> 2SG-SUBJ 'you have cursed'	<b>à</b> PERF	<b>ànòmá</b> curse	→ <b>wànòmá</b>

In these examples, a pronominal prefix is added to a perfective marker, and a verb to form the perfective form of the verb. We notice from the examples that the addition of the pronominal prefix to the perfective marker results in a vowel sequence at the word boundary which is impermissible in the language. To resolve the impermissible sequence, the pronominal prefix loses its vowel in the output form. We can understand why the pronominal rather loses its vowel. The construction being formed is the perfective form, hence the perfective marker must be retained in the output to identify the construction as a perfective form. Further to that, the vowel in the pronominal prefix is deleted because per the Lexical Integrity hypothesis (Booij 2009; Lieber & Scalise 2006) segments in the roots are to be protected than those in the peripherals such as affixes, hence when the vowel sequence occurs at the word boundary, the prefix loses its vowel, confirming that syntactic processes do not affect the internal structure of the root word. It is in this context that the pronominal loses its vowel in rapid speech. In addition to the loss of a vowel, we observe other phonological changes in the output. We notice in example (2a) and (2b) that the velar /k/ changes to a glottal /h/ in the output. This occurs because in Esahie, whenever the velar sound /k/ occurs intervocalic, the velar is softened in the intervocalic position, hence the change of /k/ to /h/ in the output forms.

### 3.1.2 *V<sub>1</sub> Elision in Possessive Constructions*

The possessive construction in Esahie is marked with a possessive pronoun attached to a noun. In situations where the nouns begin with a vowel, a sequence of vowel is created at the word boundary. When this happens, the vowel of the possessive pronoun (*V<sub>1</sub>*) is lost in a *V<sub>1</sub> # V<sub>2</sub>* sequence. Study the examples in (3) below:

- (3) a. **wó**    **àlíé**                      →    **[wàlíé]**  
2SG    food  
         'your food'
- b. **mí**    **àdzàpàdíé**                      →    **[màdzàpàdíé]**  
1SG    property  
         'my property'





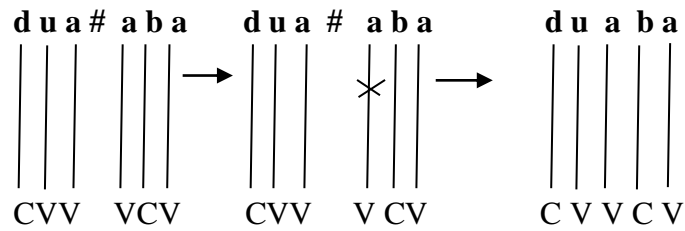
### 3.1.3 V<sub>2</sub> Elision in Compounds

Compounds are formed by combining two or more independent words to get a new word. As stated earlier, when two words are juxtaposed to form a compound word, and the first constituent ends with a vowel (V<sub>1</sub>), and the second constituent begins with a vowel (V<sub>2</sub>), the second constituent loses its initial vowel. Consequently, in the sequence of V<sub>1</sub> #V<sub>2</sub> across syllable boundary in a compound, the V<sub>2</sub> is elided as shown in example (5).

(5)	Input			Output
a.	<b>dùá</b> tree	#	<b>ɔ́bá</b> offspring	<b>dùàbá</b> ‘fruit’
b.	<b>àhìní</b> chiefs	#	<b>èfíé</b> house	<b>àhìnífíé àhìnjíé</b> ‘palace’
c.	<b>bàká:</b> tree	#	<b>èbóín</b> outer cover	<b>bàkà:bóín</b> ‘tree bark’
d.	<b>ànídzí</b> happy	#	<b>àdíé</b> thing	<b>ànídzídíé</b> ‘happiness’
e.	<b>pé</b> to like	#	<b>àdíé</b> thing	<b>àpédíé</b> ‘will’

We find in the above examples that the second constituents lose their initial vowels in the output form. In all the examples in the data, we notice that V<sub>2</sub> is deleted, while the V<sub>1</sub> is maintained. A careful look at the tonal pattern of the inputs show that the first constituent of the compound word has a final H [V<sub>1</sub>] tone whereas the second constituent has an initial L [V<sub>2</sub>] tone. However, we notice in the output that the initial L tone of the second constituent is lost. We therefore conclude, based on the data at our disposal, that in a compound construction, where there is V<sub>1</sub>#V<sub>2</sub>, with the V<sub>1</sub> being H tone, and the V<sub>2</sub> as L tone, the L of the V<sub>2</sub> is deleted. When the V<sub>2</sub> is deleted, its L tone is left floating. The floating L tone then re-associates with the vowel to the left which has a H tone and docks on it to become HL.<sup>4</sup> This is similar to what happens in Fante (Abakah 2004a, 2004b), as in Fante the V<sub>2</sub> is deleted when it is a low vowel preceded by a high vowel at syllable boundary. However, in Fante, the floating tone causes a downstep in the H tone it precedes. V<sub>2</sub> elision in Esahie is captured by the following illustration in figure 2 below.

<sup>4</sup> Section 6.1 offers more details on how the floating tones behaves.

Figure 2: V<sub>2</sub> elision in a compound word

### 3.1.4 Syllable Loss

Another instance of elision in Esahie compounding involves syllable loss. In some compounds, a syllable is deleted in the output form. Consider the following example.

(6)	Underlying	Surface	Meaning
a.	ǎdzá # Kwàkú	ǎdzá:kú (ǎdzeeku)	‘male name’
b.	ńzá: # fùfúé	ńzá:fúé	‘palm wine’
c.	pàpá # Kòfí	pà:kòfí	‘male name’
d.	Náná # Òséí	nà:séí	‘male name’

We notice from the data the loss of a syllable in the output form. Again, the compounding process involves two phonological processes. First, there is a loss of the first syllable of the second stem, after which there is a compensatory lengthening. Apparently, the loss of the syllable is compensated for by lengthening the final vowel of the first stem. In example (6a), *ǎdza* + *kwaku*, the first syllable of the second stem is truncated to [ku] before it is attached to the first stem resulting in *ǎdzaku*. Afterwards, the final vowel of the first stem is lengthened to surface as *ǎdzaaku*. Following tongue root harmony, the [-ATR] vowel /a/ is changed to [+ATR] /e/ resulting in *ǎdzeeku*. Again, we notice that the syllable loss is bi-directional in Esahie. In example (6a and 6b), it is the first syllable of the second stem that is elided, but in example (6c), it is the second syllable of the first stem which is lost. This syllable loss is illustrated in figure 3 below:

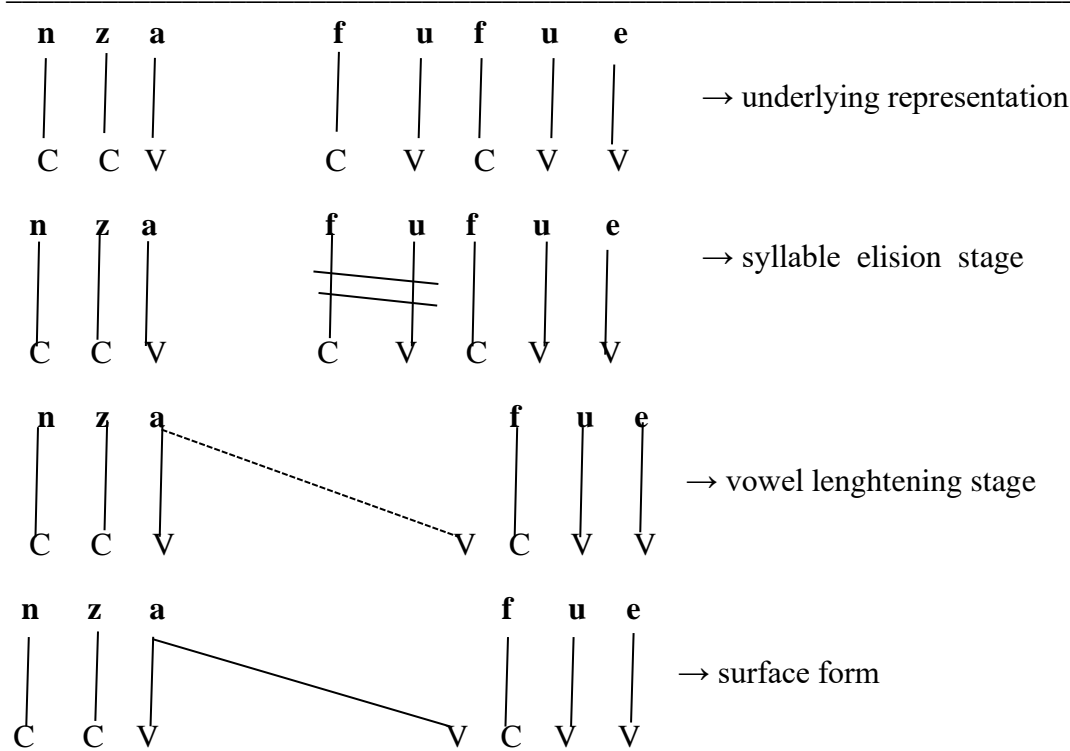


Figure 3: A representation of syllable loss.

Abakah (2004b) reports that in all dialects of Akan, intervocalic consonant that occurs in human names and kinship terms are deleted in a CVCV syllable structure as in:

- (7) a. **papa + kwasi** → **paakwesi** 'male name'  
 b. **nana + mansa** → **naamansa** 'female name'  
 c. **kofi + nimo** → **koonimo** 'male name'

Although the data in example (7) is like that of Esahie, it must be noted that the context of elision varies. While in Akan it is always the second syllable of the first stem which is deleted, in Esahie, the elided syllable is not position specific. It could be the initial stem of the second constituent as in example (6a) or the second stem of the first as in example (6c). Given similar context, one cannot conclude that the elision in Esahie is just intervocalic loss. While one can argue that in example (6a) it may be the loss of the consonant /kw/, the same cannot be said of [fu] in [fufue] in example (6b) where there is

a complete syllable loss. This is because the syllable loss is accompanied by a lengthening of a vowel. Thus, it is appropriate, therefore, to call this process as it occurs in Esahie as syllable loss followed by compensatory lengthening, as that will capture all similar cases. Similar to Esahie, in Dagbani, some parts of the syllable are truncated when they co-occur with other word forms. For instance, in a noun-adjective sequence, the second syllable of the first constituent is lost in the compounding process. The deleted syllable is always a CV with either a lateral or a glottal onset consonant as exemplified below.

- (8) a. **ku.li** + **pal.li**      ⇨      **ku.pa.li**  
          funeral      raw                      ‘fresh funeral’
- b. **su.li** + **yo.li**      ⇨      **su-yo.li**  
          anger      bad                      ‘bad anger’

(Abdul-Rahman 2013: 226)

In addition to the segmental changes in Esahie discussed, there are tonal processes that are triggered by the elision of the segments, and these will be discussed in section 4.

### 3.3 Pre-Sonorant High Vowel Elision

Another occurrence of vowel elision in Esahie is at a pre-sonorant position. In Esahie, anytime a [+High] vowel occurs before a sonorant, the vowel is elided. This takes place in a CVCV word where the C<sub>2</sub> is a [+Sonorant, -Lateral, -Nasal, -Continuant], (CVRV) that is the liquid /r/. The V<sub>1</sub> invariably deletes resulting in a CRV sequence. Study the examples in (9) below.

(9)	Underlying	Surface	Meaning
a.	<b>tìnàbíré</b>	<b>tìnàbré</b>	‘seat’
b.	<b>nètíré</b>	<b>nètré</b>	‘dust’
c.	<b>tènvìrè má</b>	<b>tènvrè má</b>	‘tongue’
d.	<b>ànwúró</b>	<b>ànwró</b>	‘town’
e.	<b>ḡgùrùmá:</b>	<b>ḡgrùmá:</b>	‘okro’/ ‘okra’

From the examples, we observe the elision of a pre-liquid [+high] vowel in a CVRV syllable structure. The data further show two types of pre-liquid [+high] vowel elision. In example (9a-c), the high vowels are [-ATR, front] vowels, while that of



c.	<b>èsóín</b>	<b>èsóĩ</b>	‘elephant’
d.	<b>bèsín</b>	<b>bèsĩ</b>	‘back’
e.	<b>èbíín</b>	<b>èbíĩ</b>	‘feces’

A close examination of the data shows the elision of a final nasal consonant. In example (11a) the final nasal consonant in *àwòsín* is lost in the output form, while the [+high] vowel is nasalized to get *àwòsĩ* ‘darkness’. The derivation involves two ordered phonological processes of nasalization before elision. First, the nasal consonant regressively spreads its nasality property onto the final vowel causing it to be nasalized. Subsequently, the nasal consonant is lost resulting in the surface form. This phenomenon is also present in the French derivation of *bō*. In French, the word [bon] becomes [bō] after it has gone through an ordered process of nasal assimilation and final consonant elision. The final nasal elision can be represented as follows in figure 5.

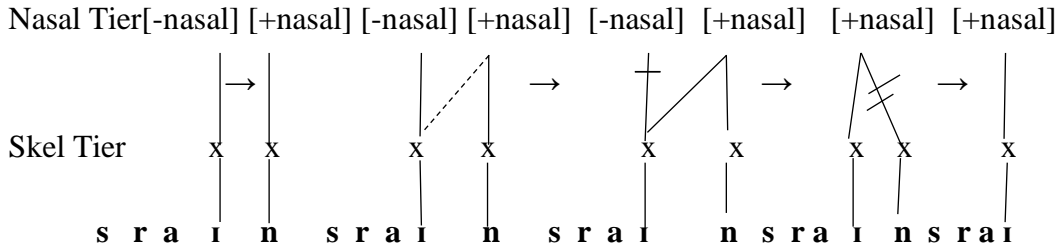


Figure 5: A representation of final nasal elision

It will be recalled from the syllable structure (cf. section 2.0) that the alveolar nasal /n/ is allowed at the coda. Hence, the deletion of nasal consonant in this structure stems from the nasalisation of the preceding vowel. Akan also deletes consonants in the word final position in some context. Adomako (2015) notes that in a CVVN, the final nasal which is [m], is sometimes deleted in some reduplicants final position. He explains that the morpheme-final bilabial nasal is deleted when reduplicating bimorphemic verbs that end in bilabial nasal as in example (12) below.

(12) **ɛɣɛm** → **ɛɣɪ-ɛɣɛm** → ‘to investigate’

He notes further that [m] deletion in the reduplicants of the bimorphemic base is an instance of the emergence of the unmarked, and also to satisfy the requirement for an open reduplicant for bimorphemic bases which is stronger than preserving the reduplicant-final nasal. Dagbani also exhibit final nasal elision, but where Esahie will

delete an alveolar nasal at the word final position, Dagbani deletes a bilabial nasal at the word final position in a compounding process as shown in (13) below.

- (13) **kpam** ‘oil’ **bɛ.ɣɔ** ‘bad’  $\Rightarrow$  **kpabɛ.ɣɔ** ‘bad’/‘dirty oil’  
(Abdul-Rahman 2013: 226)

While both languages delete final nasal consonant, the consonant that is deleted in Esahie is an alveolar nasal /n/, whereas that of Dagbani is a bilabial nasal /m/.

## 5.0 Elision in borrowed words

According to Bussmann (2006: 55), linguistics borrowing or loanwords is the “adaptation of a linguistic expression from one language into another”. Thomason and Kaufman (2001: 37) on the other hand refer to it as “the incorporation of foreign features into a group’s native language by speakers of that language: the native language is maintained but is changed by the addition of the incorporated features”. Esahie also borrows words from other languages, especially the English language to fill lexical vacuum or for prestige. The borrowed words come with their own syllable structure which may conflict with that of Esahie. When this happens, the borrowed words with impermissible syllable structure undergo some repair strategies. One of these strategies is elision. The elision in the borrowing process is to allow the borrowed words conform with the syllable structure of Esahie. The elided segment may be a consonant or a vowel. In the sections that follows, I discuss the elision of consonants and then vowels in borrowed words.

### 5.1 Consonant Elision in borrowed words

Esahie does not allow consonants in the coda position unless for the nasals /n, m/. Due to this, borrowed words from English with non-nasal coda must be re-syllabified. The re-syllabification is done either by insertion or by consonant elision. In the case of consonant elision, the C<sub>1</sub> or C<sub>2</sub> may be elided. There is no rule governing the choice of C<sub>1</sub> or C<sub>2</sub> deletion. The choice of consonant to be deleted is randomly selected by the native speakers, probably following their inherent phonotactic knowledge. Let us examine the data in example (14) below.

- |      |                |               |        |
|------|----------------|---------------|--------|
| (14) | <b>English</b> | <b>Esahie</b> |        |
| a.   | /fækt/         | [fæ.dɪ]       | ‘fact’ |
| b.   | /tæk.si/       | [ta.zi]       | ‘taxi’ |
| c.   | /æsk/          | [a:.zi]       | ‘ask’  |

d. /peɪst/ [pe.sɪ] ‘paste’

We notice from the data above that in (14a and 14b) it is the  $C_1$  which is deleted, while in (14c-14d) it is the  $C_2$  that is deleted. The elision of the consonant triggers other processes. The re-syllabification process involves four rules, namely— consonant elision, vowel insertion, re-syllabification, and intervocalic voicing. In (14a) for instance, the English borrowed word /fækt/ has a final CC. The  $C_1$  is first deleted leaving a final /t/. Esahie does not permit /t/ in the coda so a vowel is inserted to become /fæti/. The word, after insertion, becomes disyllabic, and is further re-syllabified for /t/ to become onset following the onset maximization principle — /fæ.ti/. Finally, through voicing assimilation, /t/ becomes /d/ resulting in /fæ.di/ being realised by the natives. This process is illustrated in figure 6 below.

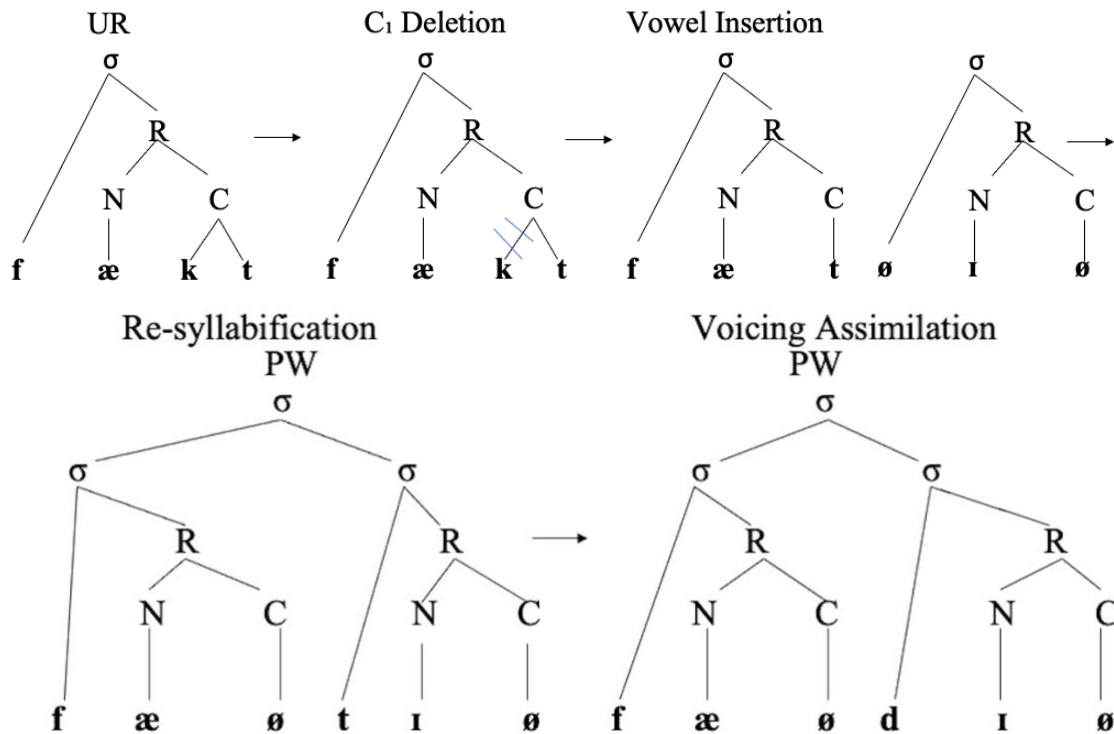


Figure 6: Consonant Elision in English borrowed words



## 5.2 Vowel elision in borrowed words

The vowel distribution of the Esahie disallow the [front, high], vowels /i, ɪ/ at word-initial position. Based on this, when English words with the initial [front, high] vowel are borrowed into Esahie, these vowels are elided. Consider the words in example (15) below.

(15)	<b>English</b>	<b>Esahie</b>	
a.	/ɪn. 'sɪst/	[n.zɪ.sɪ]	'insist'
b.	/ɪn. 'stɛd/	[n.zɪ.dɛ:.dɪ]	'instead'
c.	/ɪn. 'spɛktə/	[n.zɪ.pɛ.da]	'inspector'

In these examples, the vowel /ɪ/ is elided as discussed earlier. This results in the word beginning with the alveolar nasal /n/. We notice in the data, for instance in example (15a) /ɪn 'sɪst/, that the initial vowel /ɪ/ of /ɪn- 'sɪst/ is elided because Esahie does not accept the vowel at the initial position. The elision of the initial vowel causes the nasal /n/, which is a sonorant to become syllabic. The syllabic nasal then assimilates the onset voiceless fricative of the second syllable /s/ to become voiced /z/. Following the similar rules of consonant elision, vowel insertion and re-syllabification, the CC at the coda of the second syllable is restructured resulting in the word being realised as [nzɪsɪ].

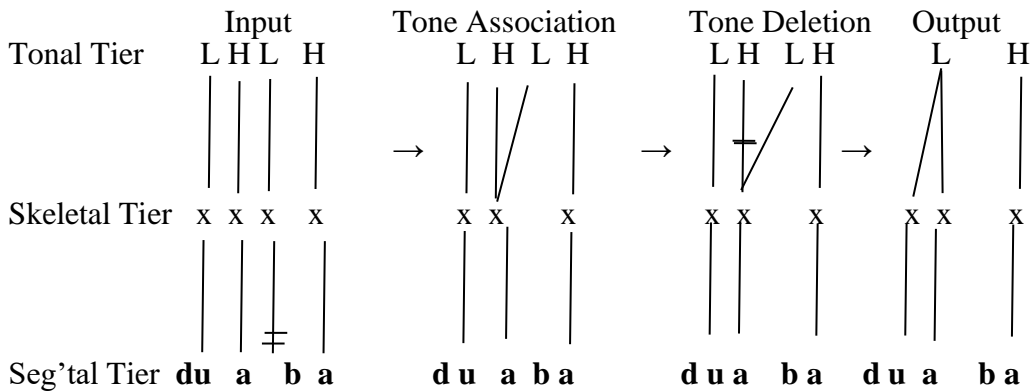
As mentioned earlier, there are tonal processes that are caused by the elision of the segments, and these are discussed in the next section.

## 6.0 Tonal elision in Esahie

The vowel elision discussed in sections 3 and 4 triggers tonal processes. This section discusses the changes that tones undergo when the segment is elided. Among these changes are tone re-association, tone spread, and tone deletion. The tone is independent so when the TBUs are gone, the tone remains to behave separately (Goldsmith, 1976).

### 6.1 Tonal elision in V<sub>2</sub> elision

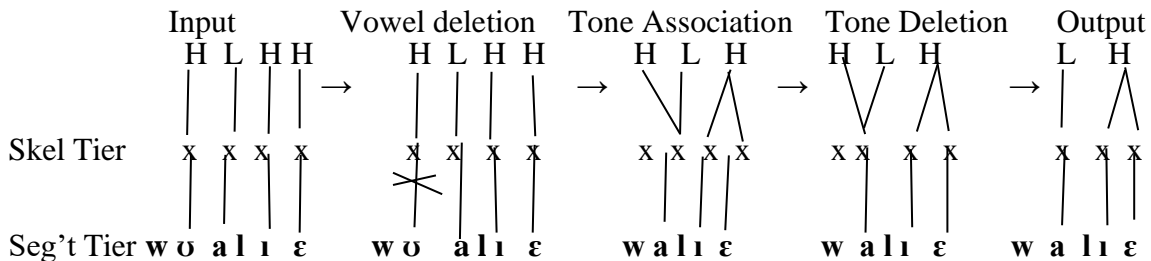
We recall in example (5a), (cf. section 3.1.3) *dùá* + *ɔ́bá* becoming *dùàbá* 'fruit', a loss of V<sub>2</sub> in the compound word. After the deletion of the V<sub>2</sub> segment, several tonal processes take place. When the segment is elided, a floating L tone is left in its place. The floating L tone then re-associates with the vowel to the left which has a H tone and docks on it to become HL. Since derived nouns in Esahie have a LH tonal output regardless of the tonal input (cf. Owusu Ansah & Akanlig-Pare ms), the low tone then spreads onto the H. The H tone is subsequently delinked leaving the L tone to yield a LH tonal output. This is represented in figure 7 below.

Figure 7: Tone Elision in V<sub>2</sub> Segment

Because the vowels /u, a/ in the output both bear L tones, they are linked together in compliance with the Obligatory Principle (OCP) in the Autosegmental theory that forbids tones of the same value to be adjacent. In the case of V<sub>2</sub> in the perfective construction, the tone is deleted with the vowel. This is because even if the tone survives and re-associates with another segment, it will be deleted because of the expected tonal output.

## 6.2 Tonal Elision in V<sub>1</sub> elision

In section 3.1.2 on V<sub>1</sub> elision, we observed that the pronominals lose their vowels in the output as in *wó+àlǐé* → [*wàlǐé*]. The loss of the vowel will leave the H tone to be floating. This floating H tone is associated with the initial vowel of the noun to realise a HL tone. To satisfy the LH tonal condition of the output form, the H floating tone from the V<sub>1</sub> which is associated with the initial L tone of the second word is delinked. This is shown in figure 8 below.

Figure 8: Tone Elision in V<sub>1</sub> Segment

## 7.0 Conclusion

The paper has demonstrated the operations of elision in Esahie. It has shown that vowels, consonants, syllables, and tones can be elided in the language. We observed that vowel elision is very productive across word boundary in perfective constructions, possessive constructions and compounds in Esahie. In a  $V_1\#V_2$ , the vowel that is deleted across word boundary varies. We find that in the possessive and perfective constructions, the deleted vowel is always  $V_1$ , whereas in a compound the deleted vowel is always  $V_2$ . Following the discussions, I conclude, based on the data at our disposal, that in the perfective and possessive construction in Esahie, with a  $V_1\#V_2$ , the  $V_1$  is deleted, whereas in a compound construction,  $V_2$  is invariably deleted.

Again, we also noticed that to preserve the tone of the deleted segments, several tonal processes such as tone re-association, tone spread, and tone deletion take place after the deletion of the segments. In  $V_1$  elision, the floating H tone left behind after the vowel elision is associated with the initial vowel of the noun to realise a HL tone. To satisfy the LH tonal condition of the output form, the H floating tone from the  $V_1$  which is associated with the initial L tone of the second word is delinked. In the case of compounds, after the deletion of the  $V_2$  segment, the floating L tone re-associates with the vowel to the left which has a H tone to become HL. Derived nouns in Esahie have a LH tonal output regardless of the tonal input, hence, to satisfy the LH tonal condition of the output form, the floating low tone then spreads onto the H of the  $V_1$ . The H tone is subsequently delinked leaving the L tone to yield a LH tonal output for the compound word.

The study has further shown that consonants can be elided at word final positions in Esahie, when an alveolar nasal /n/ follows a [+high] vowel in the word final position. This occurs after the nasal has regressively assimilated a [-back, +high, -ATR] vowel to be nasalized. This elision is ordered for the nasal consonant to regressively spread its nasality property onto the final vowel causing it to be nasalized. Subsequently, the nasal consonant is deleted. The study further reveals that to meet the syllable structure requirement of Esahie, borrowed words with impermissible syllable structures such as consonant clusters, or non-nasal coda are re-syllabified through elision.

Finally, with regards to the vowel to be deleted at the word boundary, the choice of vowel to be deleted in a  $V_1\#V_2$  context has been explained to be morphologically conditioned. However, to offer more insight on the choice of vowel to be deleted, I will recommend a morphosyntactic analysis in the future to comprehensively account for this. Ultimately, the evidence in this paper confirms that there is an interface between phonology and morphology when accounting for elision in Esahie.

### Abbreviations

1	First Person
2	Second Person
3	Third Person
ATR	Advanced Tongue Root
C	Consonant
C <sub>1</sub>	First Consonant
C <sub>2</sub>	Second Consonant
H	High
HT	High tone
L	Low
LT	Low tone
LTS	Low Tone Spread
N	Noun
PW	Phonological Word
PERF	Perfective
PL	Plural
PRFX	Prefix
Seg't	Segmental
Skel	Skeletal
UR	Underlying Representation
V	Vowel
V <sub>1</sub>	First Vowel
V <sub>2</sub>	Second Vowel

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